



SEQUENCE LISTING

<110> Ditzel, H.
Burton, D.
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<120> Autoantibodies to glucose-6-phosphate isomerase and their participation in autoimmune disease

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Trp Ala Ser Thr Arg Glu Ser Gly Val Pro Asp Arg Phe Ser Gly Ser
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Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu
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Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Thr Glu Phe
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Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr
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35 40 45
Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
50 55 60
Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr
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Trp Ala Ser Thr Arg Glu Ser Gly Val Pro Asp Arg Phe Ser Gly Ser
50 55 60
Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu
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Phe Ser Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Thr Gly Thr Tyr
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 Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr
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 35 40 45
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 50 55 60
 Lys Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg
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35 40 45
Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Leu
50 55 60
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35 40 45
Asn Lys Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
50 55 60
Lys Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg
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35 40 45
Gly Gly Val Ser Leu Ala Gln Ser Phe Gln Asp Arg Val Ser Leu Thr
50 55 60
Arg Asp Arg Ser Ser Asn Thr Val Phe Leu Glu Leu Ser Gly Leu Thr
65 70 75 80
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35 40 45
Gly Ser Thr Phe Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
50 55 60
Arg Asp Asn Ser Lys Asn Thr Ala Phe Leu Arg Met Asn Ser Gln Arg
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35 40 45
Arg Gly Thr Thr Asn Tyr Asn Arg Val Phe Gly Ser Arg Val Ser Met
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Ser Val Asp Met Ser Arg Ser Gln Phe Phe Leu Glu Leu Arg Asp Val
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35 40 45

Gly Pro Val Asn Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr
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65 70 75 80
Ser Gly Asp Thr Ala Val Tyr Tyr Cys Ala Arg Val Ala Tyr Asp Gly
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<210> 95
 <211> 32
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 <213> Homo sapiens

<400> 95
 Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
 1 5 10 15
 Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
 20 25 30

<210> 96
 <211> 32
 <212> PRT
 <213> Homo sapiens

<400> 96
 Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr
 1 5 10 15
 Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
 20 25 30

<210> 97
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 <213> Homo sapiens

<400> 97
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 1 5 10 15
 Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys
 20 25 30

<210> 98
 <211> 32
 <212> PRT
 <213> Homo sapiens

<400> 98
 Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
 1 5 10 15
 Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
 20 25 30

<210> 99
 <211> 32
 <212> PRT
 <213> Homo sapiens

<400> 99
 Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Ser
 1 5 10 15
 Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Thr Gly Thr Tyr Tyr Cys
 20 25 30

<210> 100
 <211> 32
 <212> PRT
 <213> Homo sapiens

<400> 100
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 1 5 10 15
 Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys
 20 25 30

<210> 101
 <211> 32
 <212> PRT
 <213> Homo sapiens

<400> 101
 Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
 1 5 10 15
 Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys
 20 25 30

<210> 102
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 102
 Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala
 1 5 10

<210> 103
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 103
 Phe Gly Gly Gly Ala Lys Val Gly Ile Arg Arg Thr Val Ala
 1 5 10

<210> 104
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 104
 Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala
 1 5 10

<210> 105
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 105
 Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala
 1 5 10

<210> 106
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 106
 Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala
 1 5 10

<210> 107
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 107
 Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala
 1 5 10

<210> 108
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 108
 Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala
 1 5 10

<210> 109
 <211> 332
 <212> DNA
 <213> Homo sapiens

<400> 109
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cactttgtc	gtctgatgg	agtaataat	tctatataga	atccgtgaag	ggccgattca	180
ccatctccaa	ggacaattct	aagaacacac	tgtatctgca	aatgaacagc	ctgagaattg	240
acgacacggc	tgtctattac	tgtgcgattt	ccctgggg	aactaccgct	tttaactact	300
ggggccaggg	aaccctggtc	accgtctcct	ca			332
<210> 110						
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<212> DNA						
<213> Homo sapiens						
<400> 110						
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cttatattct	atgatggaaag	taataaaatac	tatgcagact	ccgtgaaggg	ccgattcacc	180
atctccagag	acaattccaa	gaacacgctg	tatctgcaat	tgagcagcct	aagacctgag	240
gacacggctg	tctattattt	tacgaattcc	gaggtggag	ctaccgctt	tgactactgg	300
ggccagggaa	ccctggtcac	cgtctcctca	g			331
<210> 111						
<211> 335						
<212> DNA						
<213> Homo sapiens						
<400> 111						
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gtggcagtt	tatcatatga	tggaaacaag	aaatactacg	cagactccgt	gaagggccga	180
ttcaccatct	ccagagacaa	ttccaagaac	actctatatac	tgcaaata	cagcctgaga	240
gttgaggaca	cggctgttta	ttactgtgcg	atttccatag	tggaaactac	cgcttttaac	300
tactggggcc	agggAACCT	ggtcaccg	tcctc			335
<210> 112						
<211> 327						
<212> DNA						
<213> Homo sapiens						
<400> 112						
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agtgtttttt	acacttccaa	caataagaac	tacttagctt	ggtaccagca	gaaaccaggc	120
cagcctccta	agttgctcat	ttactggca	tccacccggg	aatccgggtt	ccctgaccga	180
ttcagtggca	gcgggtctgg	gacagattt	actctcacca	tcagcagcct	gcagctgaa	240
gatgtggcag	tttattactg	tcagcaat	tatgattcgt	acactttgg	ccaggggacc	300
aagctggaga	tcaaaca	gac	tgtggct			327
<210> 113						
<211> 312						
<212> DNA						
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<400> 113						
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atctatgctg	catccactt	gcaaagtggg	gtcccatca	ggttcagcgg	cagtggatct	180
gggacagaat	tcacttcac	aataaggcgc	ctgcagcctg	aagattttgc	aacttattac	240
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<210> 114						
<211> 315						
<212> DNA						
<213> Homo sapiens						

<400> 114
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ctcatctatg gtgcattccag cagggccact ggcattccag acaggttcag tggcagtggg 180
tctggacag acttcactct caccatcagc agactggagc ctgaagattt tgcatgttat 240
tactgtcagc agtatggtag ctcacctcg 300
aacgaactg tggct 315

<210> 115
<211> 327
<212> DNA
<213> Homo sapiens

<400> 115
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cagcctcta agttgtcat ttactggca tccacccggg aatccgggt ccctgaccga 180
ttcagtggca gcgggtctgg gacagatttc actctcacca tcagcagcct gcaggctgaa 240
gatgtggcag ttttattactg tcagcaatat tatgattcgt acactttgg ccaggggacc 300
aagctggaga tcaaacgaac tggct 327

<210> 116
<211> 315
<212> DNA
<213> Homo sapiens

<400> 116
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ctcatctatg gtgcattccag cagggccacc ggcattccag acagatttcag tggcagtgg 180
tctggacag atttcagttt caccatcagc agtctgcagc ctgaagatc tggcataat 240
tactgtcaac aatatgataa tggccctgac actttggcc aggggaccag gctggagatc 300
aacgaactg tggct 315

<210> 117
<211> 312
<212> DNA
<213> Homo sapiens

<400> 117
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ctcatctatg gtgcattccag tagggccact ggcattccag acaggttcag tggcagtgg 180
tctggacag acttcactct caccatcagc agactggagc ctgaagattt tgcatgttat 240
tactgtcagc agtatggtag ctcacccctc ttcggccaag ggacacgact ggagattaaa 300
cgaactgtgg ct 312

<210> 118
<211> 315
<212> DNA
<213> Homo sapiens

<400> 118
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ctcatctatg gtgcattccag cagggccact ggcattccag acaggttcag tggcagtgg 180
tctggacag acttcactct caccatcagc agactggagc ctgaagactt tgcatgttat 240
tactgtcagc agtatggaaag ctcacctcg 300
aacgaactg tggct 315

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<210> 119
<211> 342
<212> DNA
<213> Homo sapiens

<400> 119
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atgggaagaa tcaacccgac tggcgccggc gttagtcgt cacagagttt ccaggacaga      180
gtcagcctga ccagggacag gtcgtccaat acagtcttct tggaaactgtag cggcctcacg      240
gaggaggaca cggccttata tttctgtgcg aggccccat ttaacatgat ccggaaacct      300
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<210> 120
<211> 348
<212> DNA
<213> Homo sapiens

<400> 120
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gtctcacgtt ttagtgaaa tagtggaaac acattctacg cagactccgt gaaggggccgg      180
ttcaccatct ccagagacaa ttccaagaac acggcggttc tgcaatgaa cagccagaga      240
gccgaagaca cggccgttta ttactgtgcg aaagatctgt cgagtggtagc atactactac      300
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<210> 121
<211> 342
<212> DNA
<213> Homo sapiens

<400> 121
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tccattaaag gtgatagttt cttctggagc tgggtccgtc agcccgtagg gaaggggactg      120
gagtggatag ggcgtatcta cggcagaggg actaccaatt acaaccgtgt tttcgggagt      180
cgagtcagta tgcgttgtt catgtccagg agtcagttt tcttggatt gagagatgtg      240
accgcccggc acacggccgtt ctattactgt gcgagagaca aggggtccga atactcctac      300
tttgaccctt gggccaggg aatagtggtc aacgtcttct ca      342

<210> 122
<211> 376
<212> DNA
<213> Homo sapiens

<400> 122
gggctgaggt gaagaagcct gggcctcgg tgaaggtctc ctgcagggt tctggaggca      60
cattcagcag atatgtatc agctgggtgc gacaggcccc tggacaaggg cttgagtgga      120
tgggagggtt catccctccc tttggtccag taaactacgc acagaagttc cagggcagag      180
tcacgattac cgcggacat tccacgaaca cagcctacat gggctgtgac agcctgagat      240
ctggggacac ggccgtgtat tactgcgcga gagtggccta tgatggtagt ggctattaca      300
acaatatccc aaagatctac tactactcct acatggacgt ctggggcaaa gggaccacgg      360
tcaccgtgtc ctcagc      376

<210> 123
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> A synthetic flexible five amino acid tether.

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<400> 123
Gly Gly Gly Gly Ser
1 5